

Appellant's Reply Brief on Appeal
Application Serial No. 09/987,404
(RYU.007)



**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES**

In re Application of

Takeshi Kamio, et al.

Serial No.: 09/987,404

Group Art Unit: 1791

Filed: November 14, 2001

Examiner: John M. Hoffman

For: METHOD FOR SINTERING POROUS-GLASS MATERIAL, AND
METHOD FOR MANUFACTURING PREFORM AND OPTICAL FIBER

APPELLANTS' REPLY BRIEF ON APPEAL

Honorable Commissioner of Patents
Alexandria, Virginia 22313-1450
Box AF

Sir:

In accordance with the provisions of 37 C.F.R. § 41.41, Appellants respectfully submit this Reply Brief in response to the Examiner's Answer dated April 29, 2008.

Appellants respectfully request entry of this Reply Brief.

I. STATUS OF CLAIMS

Claims 1, 3-8, 10-15, 17, and 21-25 are all of the claims pending in the Application. Claims 2, 9, 16, and 18-20 were previously canceled and are no longer pending in the Application.

Claims 1, 3-7, and 21-25 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Ishikawa (U.S. Patent No. 5,306,322).

Claims 8, 10-15, and 17 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Ishikawa in view of Antos (U.S. Patent No. 6,289,698).

II. ARGUMENT

In the Examiner's Answer, the Examiner maintained the above rejections on Appeal. Furthermore, the Examiner provided a Response to Arguments in response to the Appeal Brief filed on February 25, 2008.

Appellants stand by the arguments in the Argument section of the Appeal Brief as supplemented by Appellants' below response to the Examiner's Response to Arguments.

Response to Examiner Arguments

In the Response to Argument section of the Examiner's Answer, the Examiner alleges, "[t]he ratio of 0.93 is that the ratio of d/D_{muffle} . (This would correspond to a ratio of d/x in Appellant's figure 1). Presently, Claim 1 is directed to d/D heater opening. One (sic) would understand that since $D_{\text{muffle}} < D_{\text{heater opening}}$. (sic) that the d/D of Ishikawa would have to be less than 0.93. Nevertheless Examiner has always held that Ishikawa does not explicitly disclose a value with the 0.5-0.9 range." (See Examiner's Answer dated April 29, 2008 at page 8).

Appellants submit that the Examiner's position is incorrect. That is, the ratio of d/D_{muffle} (0.93) of Ishikawa is outside of the range of the claimed invention ($0.5 < d/D_{\text{heater opening}} < 0.9$) as explained below.

First, plain scales of a "diameter d of a preform 21" and an "inner diameter D of a heater 24" shown in Figures 2-4 and 7 of Ishikawa were measured with a ruler. The results are shown in Table 1.

Table 1: Plain scales

Figure number	2	3	4	7
Diameter of d of a preform 21 (mm)	8	8	8	8
Inner diameter D of a heater 24 (mm)	35	40	38	28

Second, based on the above measurement results shown in Table 1, together with the description that “the preform had a diameter of 140 mm” disclosed in EXAMPLE 3 of column 9 of Ishikawa, the “inner diameter D of a heater 24” shown in Figures 2-4 and 7 of Ishikawa was calculated by use of a homothetic ratio as shown below. The results are shown in Table 2.

$$(\text{For example}) 8:35 = 140:X \rightarrow X=612.5$$

Table 2: Actual scales

Figure number	2	3	4	7
Diameter of d of a preform 21 (mm)	140	140	140	140
Inner diameter D of a heater 24 (mm)	612.5	700	665	653

Third, based on the above calculation results shown in Table 2, a ratio of d/D, namely, a “ratio of d/D_{heater opening}” shown in Figures 2-4 and 7 of Ishikawa was calculated. The results are shown in Table 3.

Table 3

Figure number	2	3	4	7
Ratio of $d/D_{\text{heater opening}}$	0.23	0.20	0.21	0.21

As shown in Table 3, all of the values of the ratio of $d/D_{\text{heater opening}}$ are outside of the range of the ratio of the claimed invention ($0.5 < d/D_{\text{heater opening}} < 0.9$). Specifically, all of the values of the ratio are less than 0.5. More specifically, as depicted in Graph 1 in the Declaration of February 7, 2007, in the case that the ratio of $d/D_{\text{heater opening}}$ is less than 0.5, the eccentricity error is significantly increased. Accordingly, Ishikawa cannot achieve the purpose of the claimed invention in which $d/D_{\text{heater opening}}$ is more than 0.5 in order to decrease the eccentricity error.

Appellants submit that the declarations submitted by the Appellants established the criticality of the claimed range. That is, the claimed range provides a glass base material having a low eccentricity error of a core. Additionally, the apparatus, according to the claimed invention, can be miniaturized under the condition that a clearance between the porous-glass material and the sidewall of the furnace become smaller as much as possible. These features are critical to the operation of the claimed invention.

Moreover, Appellants submit that the fundamental flaw in the Examiner's Answer is that the Examiner's "unexpected results" requirement occurs only after the initial burden is demonstrated. Here, the initial burden is not demonstrated unless the claimed parameter ($0.5 \times D < d < 0.9 \times D$) was shown by the Examiner as being known. The Examiner has failed to establish the claimed range was known. That is, the cited references do not teach or suggest this feature of the claimed invention.

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Appellants submitted declarations under 37 C.F.R. § 1.132 provide evidence that the inventors recognized the criticality of the claimed range. Therefore, since the Examiner has not met his burden, it is not necessary to establish "unexpected results".

Appellants have addressed all other points raised by the Examiner in the Appeal Brief filed on February 25, 2008.

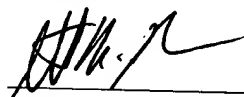
III. CONCLUSION

For the above reasons, as well as the reasons set forth in the Appeal Brief, Appellants respectfully request that the Board reverse the Examiner's rejections of all claims on Appeal. An early and favorable decision on the merits of this Appeal is respectfully requested.

Please charge any deficiencies and/or credit any overpayments necessary to enter this paper to Attorney's Deposit Account number 50-0481.

Respectfully Submitted,

Date: June 30, 2008



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